I. C. 6639 JUNE, 1932

DEPARTMENT OF COMMERCE

UNITED STATES BUREAU OF MINES
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ECONOMIC FACTORS INFLUENCING THE DOMESTIC DEMAND FOR GASOLINE

PART I - REVENUE MOTOR BUSES

BY

H. A. BREAKEY AND E. B. SWANSON

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ECONOMIC FACTORS INFLUENCING THE DOMESTIC DEMAND FOR GASOLINE. PART I - REVENUE MOTOR BUSES[1]

By H. A. Breakey[2] and E. B. Swanson[3]

Introduction

An analysis of the economic factors influencing the domestic demand for gasoline is essential to the establishment of adequate bases for the calculation of trends and the forecasting of future demand, to which the oil industry recently has given particular attention. Furthermore, a thorough analysis should result in the segregation of gasoline demand into its component parts. Such a division, of particular interest to marketers of gasoline, would indicate the ratio between the motor fuel normally supplied through the service, or "filling," station and that supplied through direct delivery to the consumer. It is quite possible that the expansion of service-station facilities may have resulted from an over-emphasis of the individual car owner, served through stations, as a user of gasoline, and that sufficient attention has not been given that portion of demand resulting from needs other than those of the privately-owned automobile.

Increased Use of Gasoline

A review of gasoline consumption during the period, 1920-1931, reveals that a definite correlation between motor-car registrations and motor-fuel demand was present during the first five years. The annual increase in car registrations was closely in accord with the yearly increase in gasoline consumption. Both nearly doubled during the five years, but the average yearly gasoline demand did not vary materially per motor vehicle, being around 10.5 or 11 barrels during each year. Beginning with 1925, however, the demand for gasoline increased more rapidly than did the registration of motor vehicles (see Table 1). In other words, the trend-curve of gasoline consumption no longer paralleled that of motor-vehicle registrations, as it did during the years 1920-1924, but began to diverge upwards, continuing

1/ The Bureau of Mines will welcome reprinting of this paper, provided the following footnote acknowledgment is used: "Reprinted from U. S. Bureau of Mines Information Circular 6639."

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its course during the seven years 1925-1931. As a result, the average gasoline demand per motor vehicle showed a yearly increase of nearly a barrel per vehicle, the consumption per vehicle being 50 per cent greater in 1931 than in 1924.

Table 1. - Motor-vehicle registrations and motor-fuel demand

Year	Registered motor vehicles, Thousands	Domestic demand for motor fuel, thousands of barrels	Average demand per motor vehicle, barrels	Index Numbers	
				Motor vehicles	Motor-fuel demand
1920	9,232	102,937	11.15	100	100
1921	10,463	108,644	10.38	113	106
1922	12,238	129,388	10.57	133	126
1923	15,092	158,720	10.52	163	154
1924	17,594	187,022	10.63	191	182
1925	19,937	226,329	11.35	216	220
1926	22,001	264,391	12.02	238	257
1927	23,133	299,818	12.96	251	291
1928	24,493	332,033	13.56	265	323
1929	26,501	375,999	14.19	287	365
1930	26,524	394,800	14.88	287	384
1931	25,814	403,455	15.63	280	392

This method of calculating gasoline demand (dividing the total demand by the number of motor vehicles registered) has been used regularly by those engaged in economic studies of the oil industry. When the calculated average annual demand began to indicate a consistent gain, in explanation thereof, attention was directed toward the extended mileage of improved highways, stimulating tourist traffic; the larger number of closed cars in use, facilitating all-weather travel; the increased power of the modern automobile; and other factors which would contribute to the increased demand for gasoline by the individual car owner. While each of these factors would influence consumption, it has been recognized that the final results of the calculation were inconsistent with the actual facts and that the actual gasoline consumption of the average automobile has not increased at the rate indicated. It is apparent that certain factors, not present in the earlier years, entered into the more recent history of gasoline demanded. The increased use of motor trucks, buses, and taxicabs has been of particular significance. (Fig. 1.) Such vehicles consume from 3 to more than 15 times as much gasoline annually as the average private automobile, and an increase in their number is correspondingly significant.

In the method of calculating gasoline demand outlined, no allowance is made for this difference in unit consumption, nor that of airplanes, tractors, locomotives, and other consuming units not included in the registration of motor vehicles. Consequently, crediting the total increase in gasoline consumption to the average automobile obviously is incorrect and leads to fictitious conclusions.

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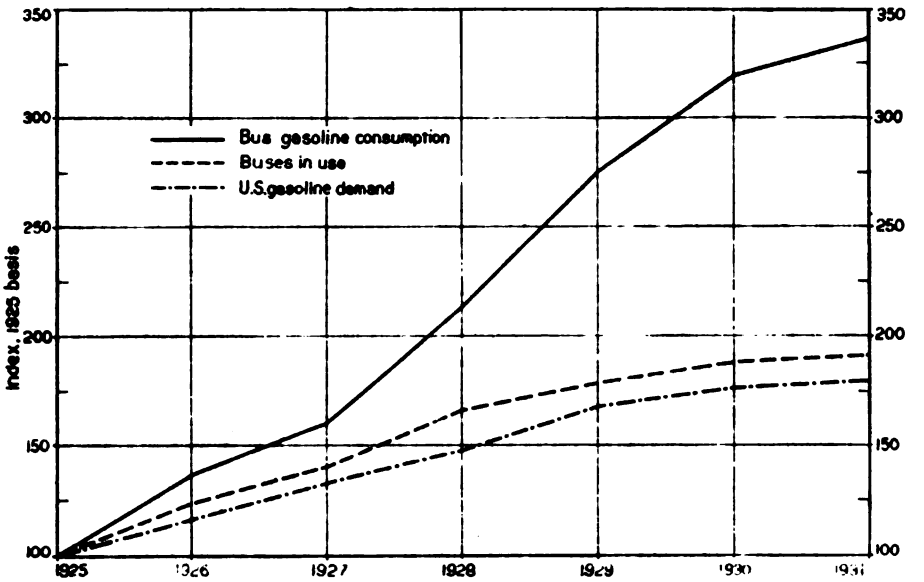

Figure 1.- Trend of gasoline consumption by buses, 1925-1931

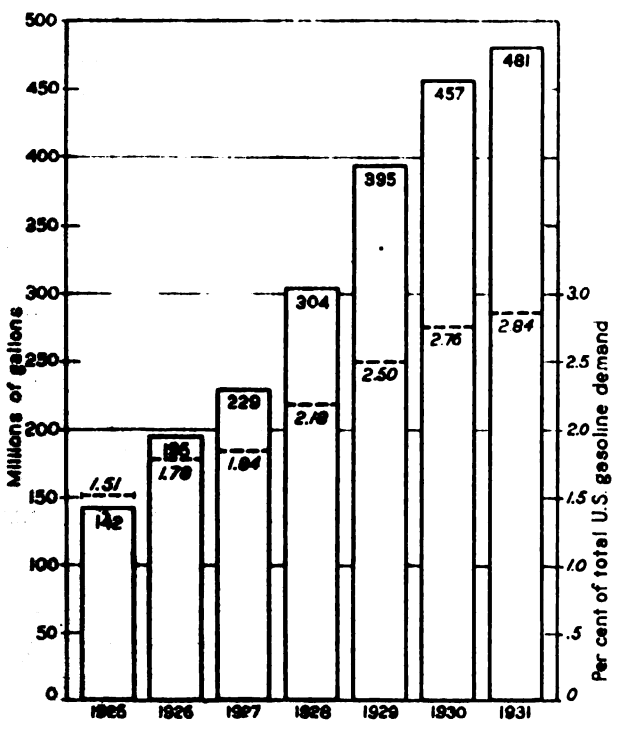

Figure 2.- Gasoline consumption by buses, 1925-1931

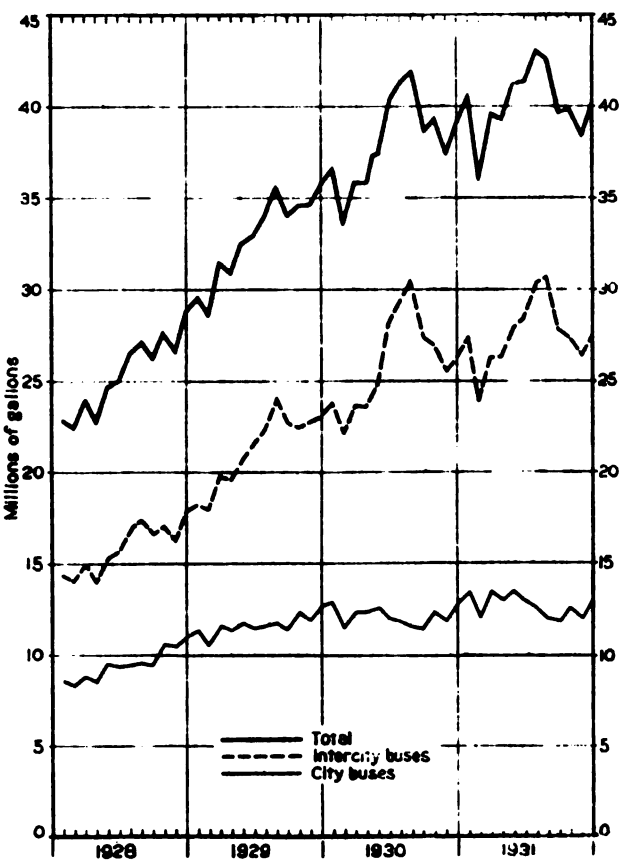

Figure 3.- Monthly gasoline consumption by intercity and city buses, 1928-1931

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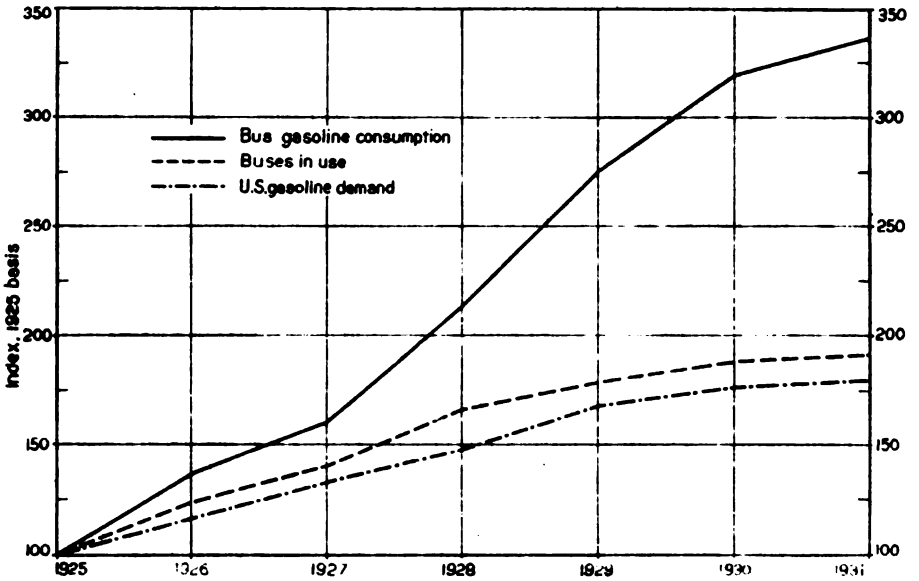

Figure 1.- Trend of gasoline consumption by buses, 1925-1931

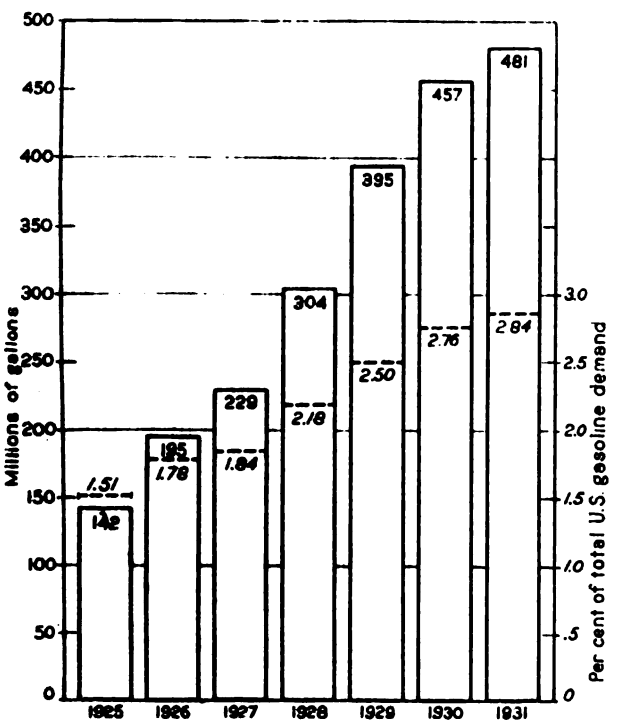

Figure 2.- Gasoline consumption by buses, 1925-1931

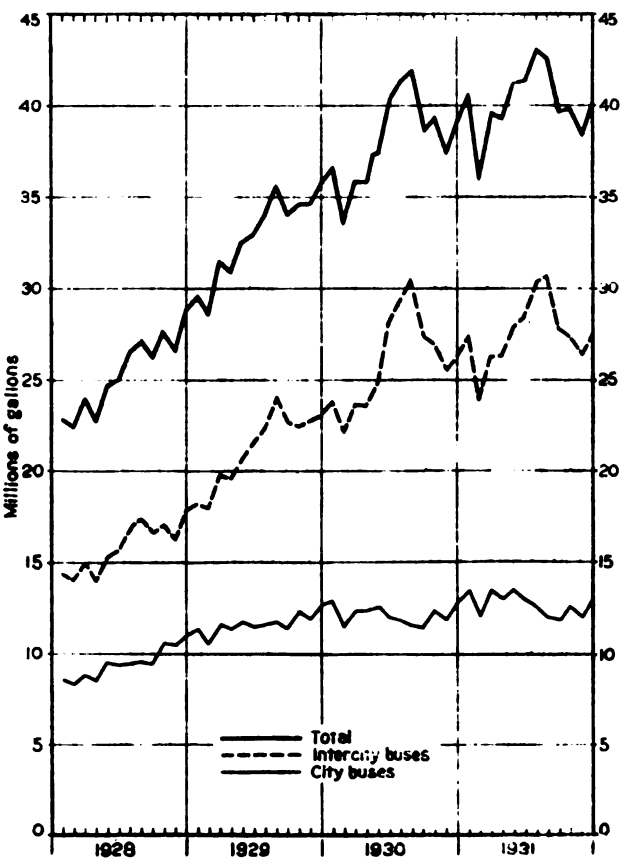

Figure 3.- Monthly gasoline consumption by intercity and city buses, 1928-1931

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As one phase of its studies of the economics of the mineral industries, the Bureau of Mines has outlined a series of reports, of which this is one, intended to analyze certain of the factors which have contributed to the increased use of gasoline. In a previous paper[4] certain data were presented on the consumption of gasoline for miscellaneous purposes, such as road and general construction, manufacturing, cleaning, and the demand by tractors, airplanes, locomotives, and motor boats. The influence of the revenue motor bus on gasoline consumption is discussed in this report. The complete cooperation of 34 companies operating city buses and 29 companies operating intercity buses, furnishing representative data for all sections of the country, is acknowledged gratefully.

The Bus as a Factor in Gasoline Consumption

As a factor in the determination of gasoline consumption, the revenue (common carrier) motor bus was almost twice as important in 1931 as in 1925, accounting for nearly 3 per cent of the total domestic gasoline demand in 1931, as compared with 1.5 per cent of the 1925 demand. (Fig. 2.) Quantitatively, the calculated gasoline demand of revenue buses has increased from 3,391,000 barrels in 1925 to 11,468,000 barrels in 1931.

Table 2. - Gasoline consumed by revenue motor buses

Year	No. of Buses[1]	Gasoline consumption (barrels)			Index	Per cent of United States demand
		City[2]	Intercity	Total		
1925	23,800	1,202,000	2,189,000	3,391,000	100	1.51
1926	29,300	1,683,000	2,966,000	4,649,000	137	1.78
1927	33,450	2,087,000	3,371,000	5,458,000	161	1.84
1928	39,650	2,714,000	4,534,000	7,248,000	213	2.18
1929	42,650	3,321,000	6,073,000	9,394,000	275	2.50
1930	44,650	3,458,000	7,427,000	10,885,000	318	2.76
1931	45,400	3,621,000	7,847,000	11,468,000	336	2.84

1/ 1928-1931 Bus Transportation, February, 1932; 1925-1927, from Editor of Bus Transportation, 330 West 42nd Street, New York City.
2/ Sightseeing and irregular included in city buses.

In relation to the number of motor vehicles registered, the number of revenue buses has shown a consistent gain, increasing from 0.12 per cent of the total in 1925 to 0.17 per cent in 1931. This relatively small proportion undoubtedly has led to the underestimation of the importance of the revenue bus in gasoline consumption. The continually increasing size of the bus and its more intensive use, as evidenced by the greater number of miles traveled per bus, has increased its importance as a user of gasoline far in excess of its increase in numbers.

4/ Breakey, H. A., and Swanson, E. B., Gasoline-Tax Refunds as a Source of Economic Information: Paper presented at North American Gasoline Tax Conference Denver, Colo., September, 1931.

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Although the number of buses recorded was nearly twice as large in 1931 as in 1925, the total gasoline consumption was 3-1/3 times as much, indicating that the average consumption per bus increased correspondingly. This situation results from the fact that intercity buses have registered increasing annual mileage and that both city and intercity buses have recorded decreased mileage per gallon of gasoline. The net result is that the average consumption of gasoline by intercity buses has increased from 6,061 gallons in 1924 to 11,585 gallons in 1931 and that of city buses from 6,616 gallons in 1924 to 9,176 gallons in 1931. In terms of miles per gallon, the intercity bus has dropped from 7.94 miles in 1924 to 4.62 miles in 1931, and the city bus from 5.56 miles in 1924 to 3.88 miles in 1931.

Table 3. - Annual bus data, 1924-1931

Year	Miles per bus		Gallons per bus		Miles per gallon	
	Intercity	City	Intercity	City	Intercity	City
1924	48,150	36,749	6,061	6,616	7.94	5.56
1925	46,507	38,272	6,578	7,434	7.07	5.15
1926	44.942	37,425	7,551	7,401	5,95	5.05
1927	40,782	37,120	7,044	7,776	5,79	4.77
1928	40,561	37,498	7,247	8,685	5,60	4.31
1929	47,375	37,410	9,708	9,376	4,88	3.99
1930	52,826	35,779	11,201	9,191	4.72	3.89
1931	53,563	35,590	11,585	9,176	4,62	3.88

Revenue buses have been considered under two classes in this report--city and intercity--and so far as possible the statistical data have been segregated correspondingly (fig. 3). The city bus, with its frequent stops, its regular route, and its peak loads during rush hours, necessitating the idling of some of the equipment during the day, gets considerably less mileage per gallon of gasoline, travels less miles per year, and has a different seasonal variation in gasoline consumption than the intercity bus.

The City Bus

The outstanding feature in the statistics of city-bus operation is the decrease in the mileage obtained per gallon of gasoline (fig. 4). This decrease has been brought about by the larger type of buses used. While the miles per gallon of gasoline has decreased 31 per cent, or from 5.56 miles per gallon in 1924 to 3.88 miles per gallon in 1931, the number of buses with seating capacities of more than 25 in use by electric railway companies has increased from 38 per cent in 1925 to 66 per cent in 1931. The average seating capacity for buses in use by electric railways has risen from 27.4 in 1925 to 30.0 in 1931. As the average number of miles traveled per city bus has remained fairly constant, the decreased mileage obtained per gallon of gasoline has resulted in an increase in total gasoline consumption. The average annual gasoline consumption per city bus has increased from 6,616 gallons in 1924 to 9,176 gallons in 1931.

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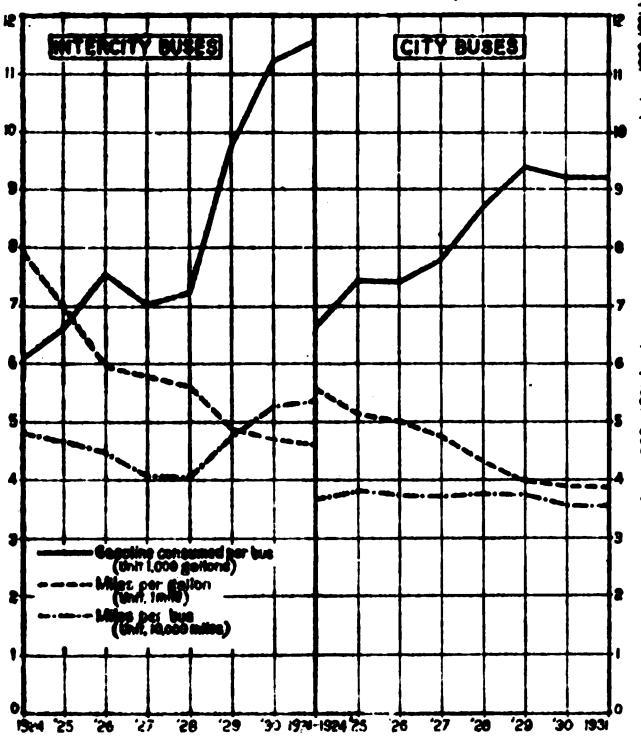
INTERCITY BUSES
CITY BUSES
Gasoline consumed per bus (Unit 1,000 gallons)
Miles per gallon (Unit, 1 mile)
Miles per bus (Unit, 10,000 miles)
1924 25 26 27 28 29 30 1924-1924 25 26 27 28 29 30 1931

Figure 4.- Comparative data, intercity and city buses, 1924-1931

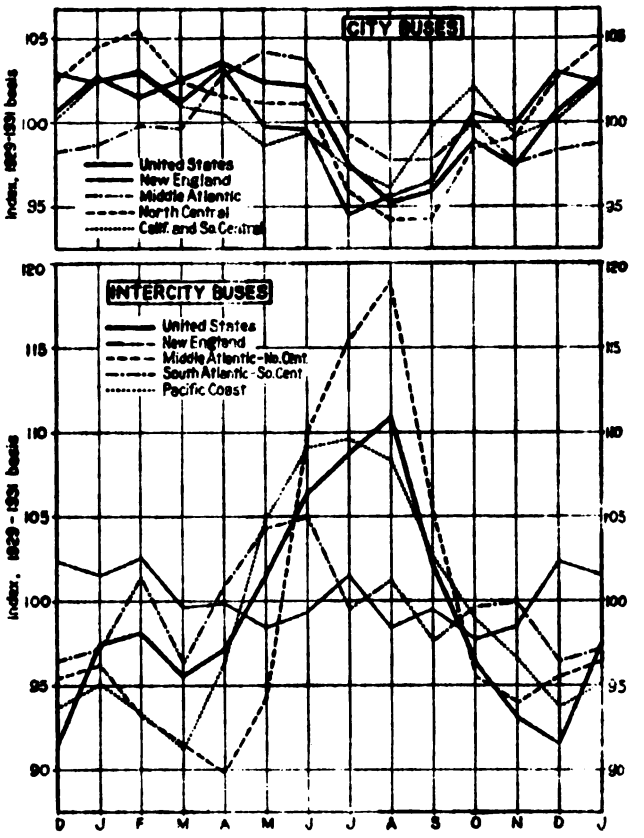

Figure 5.- Seasonal variation in bus gasoline consumption, by regions

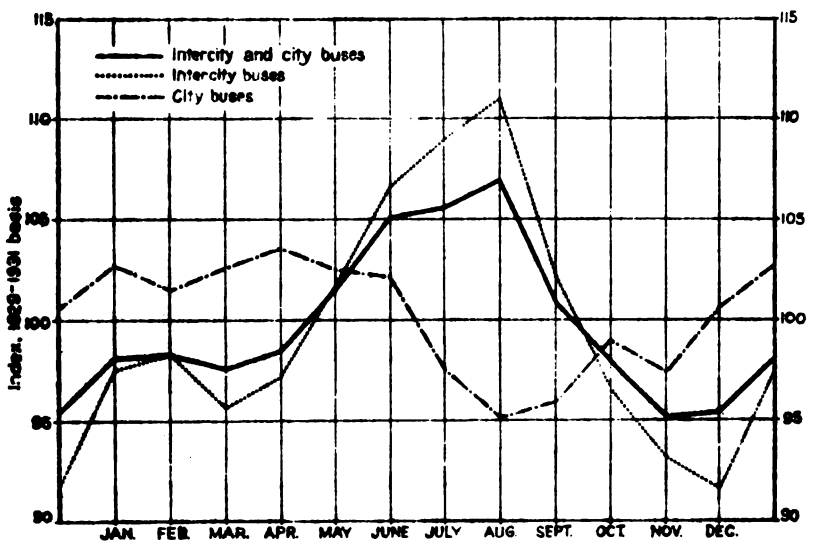
Intercity and city buses
Intercity buses
City buses
Index, 1929-1931 basis
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Figure 6.- Seasonal variation in gasoline consumption by intercity and city buses

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The average seating capacity of bus bodies manufactured during the past few years should indicate the probable immediate trend in the sizes of buses. The average capacity per bus increased from 27.8 in 1927 to 31.7 in 1930 and then declined to 29.6 in 1931. This decrease in the average seating capacity of buses manufactured in 1931 may be accounted for principally by the increased output of buses in the 25 to 28 seating capacity range. It is possible that the change reflects the increasing sentiment against large buses. Matters of taxation also may be of influence. In Kentucky, the tax on buses is graduated up to 1 cent per mile for 26 to 29 passenger buses and then is increased to 3 cents per mile for buses with a seating capacity of 30 or more passengers.

An analysis by various sections of the country does not show a uniformity in trends (see Table 4). The average number of miles traveled by city buses in the Middle Atlantic section shows a slight upward trend, the highest figure being 36,607 miles in 1931, compared with an 8-year average of 35,911 miles. The number of miles traveled per gallon of gasoline decreased yearly from 5.96 in 1924 to 3.63 in 1931, and the gasoline consumed per bus increased each year from 5,969 gallons in 1924 to 10,099 gallons in 1931, which for the years 1930 and 1931 was contrary to the experience for the United States as a whole.

In the North Central area, gasoline consumption per bus has remained fairly constant around a 7-year average of 8,716 gallons per year. From 1925 to 1929 there was an upward trend in gasoline consumption, with the exception of 1926. The falling off during 1930 and 1931 is consistent with the national experience. The number of miles traveled by the average city bus declined yearly from 41,868 in 1925 to 34,604 in 1931. This is the only section of the country which showed a consistent decline in bus miles.

All sections of the country reported a decrease in the miles obtained per gallon of gasoline, but the decline has been greater in some than in others. In the Middle Atlantic section it decreased from 5.96 miles in 1924 to 3.63 miles in 1931, while it decreased in the North Central area from 4.95 miles in 1925 to 4.02 miles in 1931, but touched a low of 3.96 miles in 1930. The South Central area had the highest mileage per gallon of gasoline of any section of the country, probably reflecting the use of a smaller-sized bus.

In the operation of city buses, the period of heavy consumption comes in the first half of the year, reaching a peak in April, declining sharply during the summer months, with August as the low point for the year. (See Table 5.) The reasons given for the summer decline are the departure of people from the cities on vacations and for residence at summer homes, loss of patronage by school children, increased use of private automobiles, and increased walking during the pleasant weather. During the period from 1924 to 1928, June stood out as the most important month for gasoline consumption, but there has been a downward trend which has leveled its importance to that of the preceding months.

The various sections of the country are uniform in their summer decline in gasoline consumption, each one dropping off sharply beginning with June,

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and all of them recovering again in the fall (fig. 5). California and the South Central sections start their recovery in September, but the North Central area lags until October before turning upward. The seasonal index for the North Central area from 1929-1931 shows an earlier up-turn and is more pronounced than that for the 7-year period from 1925-1931; it also is more pronounced than the seasonal variations for city buses in other sections of the country.

The seasonal index for the Pacific Coast-South Central area is somewhat similar to the North Central area, but the seasonal index for the Middle Atlantic area is distinctly different from the other two. After the fall recovery in October, the consumption again falls off, and it is not until April that a distinct improvement is shown. The peak consumption comes during the months of April, May, and June, and the 1929-1931 index does not show as great a decline in gasoline consumption as the indexes for the other sections of the country.

Of communities in the United States with more than 10,000 population, those depending entirely upon buses for local transportation increased from 189 in 1929 to 259 in 1931; those using combined bus and street-car service increased from 377 in 1929 to 414 in 1931, while those without local bus servic decreased from 397 in 1929 to 309 in 1931.5/ Dependence solely upon buses for local transportation is confined almost entirely to communities within the 10,000 to 50,000 population range, while nearly all of the communities above that range have combined the use of buses with the existing street-car service. The bulk of the communities without local bus service fall within the 10,000 to 25,000 population range. Of the 14,335 buses operated in cities of over 25,000 population at the beginning of 1932, 10,655 were owned by electric railways or former electric railways.6/

Intercity Buses

Intercity bus operations of the present period differ from those of the past not only in improved equipment but also in improved operation. Instead of the small company operating over a few miles or at best a few hundred miles of route, the recent tendency has been for these small companies to merge into larger ones covering several States. There is one which is international in scope, covering practically all of the United States and operating in Canada also.

Because of the fact that most of the intercity bus companies in the North Central and Middle Atlantic areas have gone through some sort of merger during the past few years, statistics for these areas are incomplete for the earlier years of the study. However, the statistics which have been received for companies operating prior to 1929, and comparison with other studies, indicate that the larger units operate their buses with a greater annual mileage than did the older and smaller companies.

5/ Bus Transportation.--: New York, February, 1931, p. 71; Feb., 1932, p. 65.
6/ Transit Journal.--: January, 1932, p. 27.

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The wider scope of operation, together with the larger buses now being used, has combined to increased the 1931 annual unit consumption of gasoline by intercity buses to almost double that recorded for 1924.

The New England area not only had the lowest annual bus mileage, but this mileage has increased but very slightly, and the miles-per-gallon does not show the wide variance between 1924 and 1931 that might be expected from the trend of the buses in other sections of the country. (See Table 6.)

On the Pacific Coast the annual mileage declined until 1928, but beginning with 1929 the trend has been upward. The gasoline consumption per bus, determined by the larger type of buses as well as the miles traveled, follows roughly though not consistently the trend of the miles per bus, showing a considerable increase in 1930 and 1931. The actual gasoline consumed by buses, however, shows a distinctly downward trend during these two years, which probably reflects the influence of the use of fewer buses because of consolidations and mergers of bus companies.

Because of the shortness of the period covered, and the unusual conditions prevailing during the past three years, it is difficult to determine from the figures shown for the other sections of the country, what trend does exist in annual mileage. However, since these figures represent the newer consolidations, and show a high mileage when compared with the older operators, it might fairly be assumed that the trend has been upward in these sections. One company averaged 92,306 miles per bus in 1931. Four out of five of these companies showed a greater number of miles per bus in 1931 than in 1930. The company reporting a reduced bus mileage credited the reduction to the rearrangement of routes among subsidiaries and highway improvements. The opening of the New York Avenue cut-off to the Baltimore Pike in Washington, D. C., reduced the bus distance to Baltimore by 4 miles each way for two buses each making eight round trips a day, or a saving of 64 miles a day for each of these buses.

The seasonal variation of gasoline consumption by intercity buses is different from that of city buses, with the exception that both reach a low point in the early winter months. (See Table 7.) The intercity buses reach a second low in March and April, which is the peak of consumption for city buses. Likewise, the variation from month to month is considerably greater for intercity buses than for city buses (fig. 6).

The bus systems of New England area are nearer the city type than the intercity. This probably reflects bus operations in a densely populated suburban area, which, while of the intercity class, take on some of the characteristics of the city type of operation.

In both the Pacific Coast section and the Middle Atlantic-North Central sections the low point of gasoline consumption is reached during the month of April, but in the Pacific Coast section there is very little change in the months from November to April. In the Middle Atlantic-North Central area the gasoline consumption for the months of March and April declines considerably from the winter gasoline consumption. The peak consumption in the Pacific

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Coast section comes during July, while in the Middle Atlantic-North Central area it comes in August.

There seems to be practically no change in the seasonal variation for the New England and Pacific Coast areas for the past three years from what it was for the period 1924-1931, but in the Middle Atlantic-North Central section buses have consumed a greater proportion of gasoline in the summer months during these recent years, while the spring decline has been advanced to include February.

The various sections of the country are uniform in their summer decline in gasoline consumption, each one dropping off sharply beginning with June, and all of them recovering again in the fall. California and the South Central sections start their recovery in September, but the North-Central area lags until October before turning upward. The seasonal index for the North Central area from 1929-1931 shows an earlier up-turn and is more pronounced than that for the 7-year period from 1925-1931, and is more pronounced than the seasonal variations for city buses in other sections of the country.

Purchase of Gasoline

Gasoline required for the operation of buses is purchased usually on annual contracts, although some purchases are made on the open market. Payment for gasoline purchased on contract usually is based on the prevailing tank-wagon quotation, although some contracts are written at a fixed price. A sliding scale, with a price graduated according to the amount of gasoline taken, is another basis for payment.

Some attempt has been made to put the bus companies in a more effective position for contracting their gasoline requirements by getting them to purchase through State bus associations. This might benefit small operators, but the plan does not appear to have met with much favor. Some of the objections met are that certain bus companies favor the use of a particular brand of gasoline; that the price of gasoline is such that the distributors could not give a better price to an association than is given to an individual company. Certain large companies report that their purchases are of such quantities that there would be no advantage to them to join other companies in their contracts.

The large interstate operators have their gasoline delivered to various points where it is convenient to reservice their buses. Some operators stated that they attempt to have deliveries in each State proportionate to the mileage traveled therein, so that the gasoline tax paid will be divided among the States in proportion to the use of roads.

The smaller intercity companies and the city companies usually have only one or two storage sites for the gasoline, located at the center of their operations. The buses carry sufficient gas to be able, in most cases,

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to make a round trip without refilling their tanks. The city buses, having an opportunity to refill more often than the intercity buses, do not carry a great amount of gasoline, their capacity ranging from about 30 to 70 gallons. Gasoline usually is supplied each time the bus comes to the garage.

The gasoline-carrying capacity of intercity buses ranges from 35 to 160 gallons. The 80-gallon tank appears to be the largest, and buses with a larger gasoline capacity usually carry two tanks. A 160-gallon capacity, even with only 3 miles to the gallon, would permit a bus to run nearly 500 miles without refilling.

Summary

1. The revenue motor bus is a factor of increasing importance in the calculation of prospective motor-fuel demand, accounting for nearly 3 per cent of the 1931 domestic gasoline consumption, as compared with 1.5 per cent of the 1925 demand.

2. The increased gasoline demand results largely from the gain in motor-fuel consumption per bus rather than from an increase in the number of buses operated. The average gasoline consumption by intercity buses increased from 6,061 gallons in 1924 to 11,585 gallons in 1931, while that of city buses has increased from 6,616 gallons in 1924 to 9,176 gallons in 1931.

3. Although the annual mileage traveled by the average bus has increased, the enlarged gasoline demand has been due principally to the decreased mileage obtained per gallon of gasoline consumed. The use of larger buses is a major factor in the increased gasoline consumption per bus-mile.

4. The monthly gasoline demand by the city bus does not vary as widely as that of the intercity bus. The use of the intercity bus for vacation travel contributes to the increased summer demand for gasoline.

5. The factors of motor bus gasoline demand analyzed in this report indicate that further increases may be anticipated.

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Table 4. - City-bus data 1/

AVERAGE MILES TRAVELED PER BUS

Year	New England	Middle Atlantic	North Central	South Central	Pacific Coast	Total United States
1924	27,084	35,586	-	-	42,559	36,749
1925	30,688	36,084	41,868	-	41,392	38,272
1926	28,108	35,134	41,022	-	41,760	37,425
1927	29,049	34,612	40,510	36,362	41,702	37,120
1928	29,005	36,502	39,717	37,472	44,134	37,498
1929	32,145	36,603	38,356	38,921	44,851	37,410
1930	32,205	36,159	35,125	38,352	45,487	35,779
1931	31,455	36,607	34,604	37,898	43,988	35,590

GALLONS OF GASOLINE CONSUMED PER BUS

1924	5,489	5,969	-	-	7,160	6,616
1925	5,725	6,830	8,457	-	7,764	7,434
1926	5,893	6,830	8,155	-	8,606	7,401
1927	6,397	6,929	8,762	5,958	8,762	7,776
1928	6,947	9,057	8,835	7,627	9,439	8,685
1929	8,719	9,652	9,328	8,172	10,669	9,376
1930	8,833	9,732	8,864	7,888	10,775	9,191
1931	8,911	10,099	8,612	7,237	10,752	9,176

MILES TRAVELED PER GALLON OF GASOLINE

1924	4.93	5.96	-	-	5.94	5.56
1925	5.36	5.28	4.95	-	5.33	5.15
1926	4.77	5.14	5.03	-	4.85	5.05
1927	4.54	5.00	4.62	6.10	4.76	4.77
1928	4.18	4.03	4.50	4.91	4.68	4.31
1929	3.69	3.79	4.11	4.76	4.20	3.99
1930	3.65	3.72	3.96	4.86	4.22	3.89
1931	3.53	3.63	4.02	5.25	4.09	3.88

GALLONS OF GASOLINE USED PER BUS-MILE

1924	0.2028	0.1678	-	-	0.1684	0.1799
1925	.1866	.1894	0.2020	-	.1876	.1942
1926	.2096	.1946	.1988	-	.2062	.1980
1927	.2203	.2000	.2165	0.1639	.2101	.2096
1928	.2392	.2481	.2222	.2037	.2137	.2320
1929	.2710	.2639	.2433	.2101	.2381	.2506
1930	.2740	.2688	.2525	.2058	.2370	.2571
1931	.2833	.2755	.2488	.1905	.2445	.2577

1/ Where a limited number of companies are included within a district, separate data are not published.

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Table 5. - Seasonal variation of gasoline consumption 1/

CITY BUSES

Month	United States		New England		Middle Atlantic		North Central		California-South Central		Month
	1924-31	1929-31	1924-31	1929-31	1924-31	1929-31	1924-31	1929-31	1924-31	1929-31	
Jan.	102.2	102.7	106.2	102.4	98.4	98.8	102.1	104.6	101.4	102.6	Jan.
Feb.	100.8	101.5	107.0	103.1	98.9	99.9	102.5	105.4	103.2	103.0	Feb.
Mar.	101.2	102.6	105.1	101.2	100.3	99.7	102.0	102.4	102.2	101.0	Mar.
Apr.	101.9	103.5	101.2	103.4	103.2	102.9	102.5	101.6	102.4	100.5	Apr.
May	101.4	102.4	97.6	99.8	103.7	104.2	100.5	101.2	100.5	98.7	May
June	102.3	102.2	97.2	99.7	103.6	103.8	101.5	100.1	100.7	99.5	June
July	99.9	97.5	93.0	94.5	100.1	99.3	99.1	95.9	96.7	97.4	July
Aug.	97.6	95.1	93.2	95.7	97.4	97.8	97.6	94.2	96.8	96.1	Aug.
Sept.	97.3	95.8	95.5	96.6	98.7	97.8	96.7	94.3	97.7	99.7	Sept.
Oct.	98.9	98.9	99.2	100.7	100.5	100.0	97.5	98.6	99.6	102.1	Oct.
Nov.	97.7	97.3	99.6	99.9	97.7	97.5	97.5	99.1	98.3	99.2	Nov.
Dec.	98.8	100.5	105.2	103.0	97.5	98.3	100.5	102.6	100.5	100.2	Dec.

1/ 100 = average monthly consumption.

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Table 6. - Intercity bus data 1/

AVERAGE MILES TRAVELED PER BUS

Year	New England	Middle Atlantic	North Central	South Central	South Atlantic	Pacific Coast	Total United States
1924	-	-	-	-	-	52,434	48,150
1925	-	-	-	-	-	49,648	46,507
1926	37,271	-	-	-	-	47,885	44,942
1927	36,619	-	-	-	-	36,903	40,782
1928	37,462	32,870	65,738	-	-	35,647	40,561
1929	37,664	43,312	61,147	52,747	-	38,379	47,375
1930	37,516	44,289	63,682	63,512	-	42,847	52,826
1931	39,280	-	59,523	67,695	57,511	44,909	53,563

GALLONS OF GASOLINE CONSUMED PER BUS

1924	-	-	-	-	-	6,140	6,061
1925	-	-	-	-	-	6,185	6,578
1926	6,997	-	-	-	-	6,547	7,551
1927	7,112	-	-	-	-	5,437	7,044
1928	7,203	6,379	12,864	-	-	5,782	7,247
1929	7,518	9,486	13,767	10,328	-	6,605	9,708
1930	7,408	10,012	14,836	12,825	-	8,359	11,201
1931	8,306	-	14,108	13,541	10,419	9,132	11,585

MILES TRAVELED PER GALLON OF GASOLINE

1924	-	-	-	-	-	8.54	7.94
1925	-	-	-	-	-	8.03	7.07
1926	5.33	-	-	-	-	7.31	5.95
1927	5.15	-	-	-	-	6.79	5.79
1928	5.20	5.15	5.11	-	-	6.17	5.60
1929	5.01	4.57	4.44	5.11	-	5.81	4.88
1930	5.06	4.42	4.29	4.95	-	5.13	4.72
1931	4.73	-	4.22	5.00	5.52	4.92	4.62

GALLONS OF GASOLINE USED PER BUS-MILE

1924	-	-	-	-	-	0.1170	0.1259
1925	-	-	-	-	-	.1245	.1414
1926	0.1876	-	-	-	-	.1368	.1681
1927	.1942	-	-	-	-	.1472	.1900
1928	.1923	0.1942	0.1956	-	-	.1621	.1785
1929	.1996	.2188	.2252	0.1956	-	.1721	.2049
1930	.1976	.2262	.2331	.2020	-	.1949	.2118
1931	.2114	-	.2370	.2000	0.1811	.2032	.2164

1/ Where a limited number of companies are included within a district, separate data are not published.

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Table 7. - Seasonal variation of gasoline consumption 1/

CITY BUSES

Month	United States	New England	Middle Atlantic	North Central	California - South Central
January	102.7	102.4	98.8	104.6	102.6
February	101.5	103.1	99.9	105.4	103.0
March	102.6	101.2	99.7	102.4	101.0
April	103.5	103.4	102.9	101.6	100.5
May	102.4	99.8	104.2	101.2	98.7
June	102.2	99.7	103.8	100.1	99.5
July	97.5	94.5	99.3	95.9	97.4
August	95.1	95.7	97.8	94.2	96.1
September	95.8	96.6	97.8	94.3	99.7
October	98.9	100.7	100.0	98.6	102.1
November	97.3	99.9	97.5	99.1	99.2
December	100.5	103.0	98.3	102.6	100.2

INTERCITY BUSES

Month	United States	New England	Middle Atlantic-North Central	South Atlantic-South Central	Pacific Coast
January	97.5	101.5	96.3	97.2	95.1
February	98.2	102.7	93.1	101.4	93.2
March	95.6	99.7	91.6	96.3	91.2
April	97.2	99.9	89.9	101.0	96.3
May	101.6	98.4	94.2	104.4	104.9
June	106.5	99.8	110.1	105.0	109.1
July	108.9	101.7	115.3	99.7	109.7
August	111.0	98.4	118.9	101.2	108.3
September	102.2	99.7	106.4	97.7	102.7
October	96.5	97.8	95.6	99.7	99.0
November	93.1	98.6	94.0	99.9	96.7
December	91.7	102.3	95.6	96.5	93.8

1/ Based primarily on 1929-1931 gasoline consumption.

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Table 8. - Gasoline consumed in the United States by revenue buses

(Thousand gallons)

Months	1928			1929		
	City buses	Intercity buses	Total	City buses	Intercity buses	Total
January	8,515.5	14,319.2	22,834.7	11,339.2	18,130.8	29,470.0
February	8,298.9	14,090.7	22,389.6	10,586.1	17,955.5	28,541.6
March	8,948.7	15,004.7	23,953.4	11,576.3	19,743.0	31,319.3
April	8,754.9	13,900.3	22,655.2	11,325.3	19,662.4	30,987.7
May	9,473.1	15,290.3	24,763.4	11,855.3	20,761.3	32,616.6
June	9,370.5	15,709.3	25,079.8	11,409.0	21,624.6	33,033.6
July	9,530.1	16,985.0	26,515.1	11,618.2	22,389.7	34,007.9
August	9,678.2	17,365.8	27,044.0	11,660.0	23,926.3	35,586.3
September	9,495.8	16,661.3	26,157.1	11,325.3	22,650.9	33,976.2
October	10,533.2	17,042.1	27,575.3	12,231.9	22,446.8	34,678.7
November	10,362.2	16,223.4	26,585.6	11,897.1	22,701.9	34,599.0
December	11,034.8	17,822.8	28,857.6	12,650.3	23,084.5	35,734.8
Total	113,995.9	190,414.9	304,410.8	139,474.0	255,077.7	394,551.7

Months	1930			1931		
	City buses	Intercity buses	Total	City buses	Intercity buses	Total
January	12,881.2	23,770.4	36,651.6	13,277.5	27,257.4	40,534.9
February	11,516.1	22,023.5	33,539.6	12,076.0	23,961.4	36,037.4
March	12,242.3	23,676.8	35,919.1	13,323.1	26,235.6	39,558.7
April	12,285.8	23,583.3	35,869.1	13,064.6	26,268.6	39,333.2
May	12,518.2	24,924.6	37,442.8	13,338.3	27,850.6	41,188.9
June	12,068.0	28,168.9	40,236.9	12,897.3	28,410.9	41,308.2
July	11,792.1	29,510.3	41,302.4	12,653.8	30,454.4	43,108.2
August	11,574.2	30,321.3	41,895.5	12,060.8	30,619.2	42,680.0
September	11,458.1	27,233.1	38,691.2	11,893.5	27,718.8	39,612.3
October	12,271.3	26,952.3	39,223.6	12,623.5	27,257.4	39,880.9
November	11,806.6	25,517.3	37,323.9	12,030.4	26,301.5	38,331.9
December	12,808.6	26,266.0	39,074.6	12,851.7	27,257.4	40,109.1
Total	145,222.5	311,947.8	457,170.3	152,090.5	329,593.2	481,683.7

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